

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): An A/D conversion apparatus of a digital video system, comprising:

an A/D converter for converting an input analog video signal to a digital signal on the basis of a reference voltage value input from an external source and outputting the digital signal; and

a reference voltage supplying portion for supplying the A/D converter with a predetermined number (M) of the reference voltage value sequentially and repeatedly during a predetermined time period, wherein the M of the reference voltage value is obtained by the following equation:

$$V_{REF} = \sum_{i=0}^{M-1} \frac{\Delta}{M} i$$

where VREF is the reference voltage value, and Δ is a quantization step width used during the A/D conversion.

2. (original): The A/D conversion apparatus of claim 1, wherein the predetermined time period is a horizontal scan period.

3. (original): The A/D conversion apparatus of claim 1, wherein the predetermined time period is a vertical scan period.

4. (original): The A/D conversion apparatus of claim 1, wherein the analog video signal is a video signal of an interlaced scan method.

5. (original): The A/D conversion apparatus of claim 1, wherein the analog video signal is a video signal of a progressive scan method.

6. (original): The A/D conversion apparatus of claim 1, wherein the M is 2.

7. (original): The A/D conversion apparatus of claim 1, wherein the M is 4.

8. (currently amended): An A/D conversion method of a digital video system, comprising the steps:

(a) converting an input analog video signal to a digital signal on the basis of a reference voltage value input from an external source and outputting the digital signal; and

(b) supplying the (a) step with a predetermined number (M) of the reference voltage values sequentially and repeatedly during a predetermined time period, wherein the M is obtained by the following equation:

$$V_{REF} = \sum_{i=0}^{M-1} \frac{\Delta}{M} i$$

where V_{REF} is the reference voltage value, and Δ is a quantization step width used during the A/D conversion; and

wherein the A/D conversion minimizes a quantization error without increasing the number of quantization bits during the A/D conversion.

9. (original): The A/D conversion method of claim 8, wherein the predetermined time period is a horizontal scan period.

10. (original): The A/D conversion method of claim 8, wherein the predetermined time period is a vertical scan period.

11. (original): The A/D conversion method of claim 8, wherein the analog video signal is a video signal of an interlaced scan method.

12. (original): The A/D conversion method of claim 8, wherein the analog video signal is a video signal of a progressive scan method.

13. (original): The A/D conversion method of claim 8, wherein the M is 2.

14. (original): The A/D conversion method of claim 8, where in the M is 4.